

2000

National Institutes of Health

National Center *for* Complementary *and* Alternative Medicine

I want to share my vision

of where I expect complementary and alternative medicine to be in the years to come. As a result of rigorous scientific investigation, several therapeutic and preventative modalities currently deemed elements of CAM will prove effective. Therefore, in future years, these interventions will be integrated into conventional medical education and practice, and the term "complementary and alternative medicine" will be superseded by the concept of "integrative medicine." The field of integrative medicine will be seen as providing novel insights and tools for human health, and not as a source of tension that insinuates itself between and among practitioners of the healing arts and their patients. Advances in neurobiology will reveal more about ancient practices such as acupuncture and meditation, as well as the phenomenon of "the placebo effect" as we tap the healing power of the mind. The medical basis for effectiveness of selected herbal and nutritional supplements will be clarified, leading to their standardization and routine use. Other modalities will be found unsafe or ineffective, and an informed public will reject them. My vision is an optimistic one: owing to the NIH tradition of superb science and consumer service, the NCCAM will become the recognized leader within a vibrant, global CAM research community.

Stephen E. Straus, M.D. Director, National Center for Complementary & Alternative Medicine



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The vast majority appear to use CAM therapies in conjunction with conventional treatment.

People want relief from symptoms and will use therapies they believe can provide it.

In 1997,

the year preceding the establishment of the NCCAM, more than 40 percent of the American people, were using complementary and alternative medicine (CAM) treatments and therapies for a multitude of health problems.¹ Yet still today, few of these therapies have been tested for safety and effectiveness. CAM treatments and disciplines are as diverse as are the peoples of the world. Many CAM therapies have been used by entire civilizations for centuries and have engendered strong followings among generations of practitioners and their patients.

As CAM use by the American people has steadily increased, many have asked whether the anecdotal reports of success with these treatments are valid. In 1998, the Congress responded to this concern by elevating the NIH Office of Alternative Medicine (OAM) and expanding its mandate in creating the NCCAM at the NIH. During that year the Congress provided statutory authorities and a generous budget for the Center. In FY 1998, OAM received \$20 million. In FY 1999, the new Center's support rose to \$50 million. The Congress continued to reflect the growing interest in CAM by further increasing funding for the Center in FY 2000 to \$68.7 million. The Congress endowed the NCCAM with a broad statutory mandate to conduct and support CAM research, support research training, and disseminate information on validated **CAM therapies.** In seeking to fulfill its mandate the NCCAM undertook a number of challenges, established critical contacts with CAM practitioners, and began to fashion the scientific underpinning that will enable future research discoveries.

This report describes our accomplishments for 1999 and highlights some of our future activities.

Studies Suggest CAM Increasingly Considered a User-Friendly Option

Complementary and alternative medicine use and expenditures have increased significantly since the decade's onset. Several researchers have concluded that this heightened interest is the result of more people seeking alternative therapies, rather than established consumers visiting CAM practitioners more often. Various studies show that people appear quite willing to pay out-of-pocket for CAM services. Accordingly, the question arises: what factors motivate one's decision to use alternative therapies?

NCCAM-funded investigations have established that most CAM consumers are satisfied with conventional medicine. The vast majority appear to use CAM therapies in conjunction with conventional treatment. People want relief from symptoms and will use therapies they believe can provide it. An estimated 60 million adults used at least one alternative medical therapy in 1990, compared with approximately 83 million adults in 1997 (when Americans spent \$27 billion on alternative therapies).² CAM enjoys particular popularity among baby boomers: 1 of every 2 people age 35 to 49 reported having used at least one alternative therapy in 1997.³ However, patients remain hesitant to disclose their CAM use: fewer than 40 percent tell their physician.⁴ It is also clear that certain CAM modalities are increasingly integrated into "mainstream" medicine by primary care physicians.

A 1998 study found that several modalities, long-considered beyond mainstream medicine - biofeedback and relaxation, counseling and psychotherapy, behavior medicine, diet, and exercise - are now regarded as legitimate.⁵ Conversely, less than 30 percent of these physicians consider acupuncture, herbal medicine, and homeopathic medicine to be legitimate medical practice⁶. Traditional Oriental medicine, Native American medicine, and electromagnetic treatments were even less familiar to and least well accepted by U.S. physicians.⁷

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Building on these successes, we will continue to grow our programs to add dimension and depth to our capabilities. The recent appointment of the NCCAM's first director, an accomplished scientist with broad basic and clinical research experience in many diseases, will greatly facilitate our progress. Already we have begun the process of recruiting additional key experts in intramural research, clinical research, international affairs, CAM practice, and traditional medicine and indigenous systems. We will continue to grow our intellectual capital and research capacity. Setting these cornerstones in place will enable us, together with our partners in CAM research, to provide definitive answers regarding CAM treatments as we advance this area of science in the 21st century.

NCCAM First-year Accomplishments

Established the fundamental organizational structure and recruited top-level scientific and administrative professionals;

Launched an extramural research program providing in-house expertise in the design, review, and management of research and research training;

Initiated the first large, well-designed Phase III clinical trials for a range of CAM therapies;

Began the development of NCCAM's first five-year strategic plan;

Sponsored national conferences on critical areas of CAM practice and research;

Established a Specialized Research Centers Program to provide a nationwide focus for interdisciplinary CAM research in academic institutions;

Funded a broad portfolio of high-quality, investigator-initiated research projects;

Set the foundation for a national CAM research training program;

Established the National Advisory Council for Complementary and Alternative Medicine (NACCAM) to guide our progress in research and information dissemination activities;

Created the Cancer Advisory Panel for Complementary and Alternative Medicine (CAPCAM) to assess preliminary clinical data submitted by CAM practitioners;

Organized a Trans-Agency CAM Coordinating Committee to foster NCCAM's collaboration across DHHS and other Federal agencies; and

Provided essential support for the establishment of the White House Commission on Complementary and Alternative Medicine Policy.

Multi-Center Clinical Trials

The NCCAM has developed a diverse research portfolio in partnership with the other NIH Institutes and Centers. We are supporting some of the largest, rigorously designed, Phase III clinical trials ever conceived for a range of CAM therapies.

Ginkgo biloba for Dementia in Aging Americans

For centuries, extracts from the leaves of the *Ginkgo biloba* tree have been used as Chinese herbal medicine to treat a variety of medical conditions. In Europe and Asia, standardized extracts from ginkgo leaves are routinely taken to treat a wide range of neuro-cognitive symptoms,

including those of Alzheimer's disease. Little is known, however, about the safe dosage levels of *Ginkgo biloba* extract, let alone its actual effectiveness in preventing Alzheimer's disease. A newly funded NCCAM study, in collaboration with NIA, may help resolve these questions. In FY 1999, the University of Pittsburgh School of Medicine was awarded a six-year, \$15 million cooperative agreement to coordinate a multi-center effort to study the efficacy of *Ginkgo biloba* extract in preventing dementia, a cognitive decline in memory and other intellectual functions, in older individuals. This study, the largest of its kind ever conducted on *Ginko biloba*, will include four clinical centers and enroll almost 3,000 people. Participants who take *Ginkgo biloba* will be compared to a second group of individuals who will take a placebo.

St. John's Wort for Depression

A three-year, \$4.3 million study, currently sponsored by the NCCAM in collaboration with NIMH and the ODS, includes 12 clinical sites and is working towards its target enrollment of 336 patients with major depression. The study will be the first rigorous clinical trial of St. John's wort, known also by its botanical name, *Hypericum perforatum*, that will be large enough and long enough in duration to fully assess whether it produces a meaningful therapeutic effect. In Germany, physicians routinely prescribe herbs, including St. John's wort, for a variety of conditions, however, there are no published studies of long-term use or of appropriate dosage levels.



The NCCAM, in collaboration with the National Institute on Aging, has funded a multi-center effort to study the efficacy of *Ginkgo biloba* extract in preventing dementia, a cognitive decline in memory and other intellectual functions, in older individuals.



Millions of Americans use dietary supplements with botanical ingredients.



More than 32 million Americans suffer from Arthritis.

A study is underway verify the clinical safety of the popular nutritional supplements Glucosamine and Chondroitin Sulfate and to measure how well they work to reduce joint pain and improve mobility for sufferers of Osteoarthritis.

Clinical Trials continued

Saw Palmetto Extract for Benign Prostatic Hyerplasia

Benign prostatic hyperplasia (BPH), or enlargement of the prostate, is the most common benign tumor found in men. Anecdotal reports suggested that the botanical product saw palmetto is effective in decreasing the swelling associated with BPH. To determine the validity of these observations, NCCAM, in collaboration with NIDDK, will support a large, rigorously designed, placebo-controlled, prospective study to evaluate the effect of saw palmetto extract on symptoms and quality of life in men with moderate-to-severe prostate swelling.

Glucosamine and Chondroitin Sulfate for Osteoarthritis

Osteoarthritis (OA), or degenerative joint disease, is a common type of arthritis caused by the deterioration of cartilage, the connective tissue that cushions the ends of bones and permits their surfaces to slide smoothly across one another within the joint. Arthritic diseases are major public health problems affecting the quality of life for a large segment of the older American population. In 1995, it was reported that 32 million Americans were afflicted with this disease.⁸ Estimated medical costs for people with arthritis total \$15 billion annually.9 Accordingly, the first U.S. multi-center study to investigate the dietary supplements glucosamine and chondroitin sulfate for knee OA has been funded by the NCCAM in collaboration with NIAMS. Glucosamine and chondroitin sulfate are two natural substances, found in and around the cells of cartilage, and commonly used today as nutritional supplements. The study is expected to verify their clinical safety and effectiveness alone or in combination in reducing joint pain and improving mobility. The University of Utah School of Medicine will coordinate the \$6.6 million study, which will involve 1,200 OA patients at nine study centers across the country.

RESEARCH HIGHLIGHTS

Research Centers

Specialty Research Center Awards

In FY 1999, NCCAM funded five new Specialty Research Centers, each totaling approximately \$7.5 million over five years, bringing the total number of such Centers to nine. The Centers form the foundation for conducting innovative CAM scientific investigation through the NIH.

Each Center will support a broad range of basic, clinical, and intervention studies in CAM research and development, evaluate research opportunities in their speciality areas, and develop a research agenda. Research will examine the potential efficacy, safety, and validity of diverse CAM practices, as well as the physiological or psychological mechanisms that underlie them. These new Centers will focus on CAM research in studies of aging, arthritis, craniofacial disorders, neurological disorders, women's health, and cardiovascular disease in African-Americans. The NCCAM expects to make additional Center awards in subsequent fiscal years.

Collaborative Study of Botanicals Funded

A recent survey conducted by the Food and Drug Administration (FDA) indicated that millions of Americans use dietary supplements with botanical ingredients. However, health practitioners and consumers currently do not have adequate knowledge to evaluate critically the health effects of many botanical products in the marketplace. The first Dietary Supplements Research Centers with an emphasis on botanicals, a newly-funded collaboration of NCCAM and the NIH Office of Dietary Supplements (ODS), are expected to greatly advance the scientific base of knowledge about botanicals, including issues of their safety, effectiveness, and biological action. Competitive awards of approximately \$1.5 million per year for five years were made to the University of California at Los Angeles and the University of Illinois at Chicago.



NCCAM funded a craniofacial CAM center in Oregon will investigate whether acupuncture, chiropractic therapy, naturopathic medicine, Traditional Chinese medicine, and bodywork therapy are as effective as standard treatment for pain caused by temporomandibular disorders (TMD).



While decades of research have established the benefit of several pharmacological therapies for the effective management of pain, there are conditions both chronic and acute for which effective pain management remains elusive.

Chronic pain alone costs the Nation nearly \$80 billion annually. A large part of the NCCAM research portfolio is dedicated to evaluating CAM therapies for pain management with the goal of expanding pain treatment options.

Chronic Pain Management

Growing Evidence for Efficacy of Alternative Pain Management

Identifying new medications to block pain, and finding ways to reduce the anxiety associated with it, are important issues to resolve. In the last year, several NCCAM-funded groups reported success in reducing pain using acupuncture, either alone or in conjunction with medication, for osteoarthritis, fibromyalgia and following oral surgery. Another NCCAM-funded study showed that therapeutic touch reduced the intensity of chronic pain and its associated anxiety in elderly patients. Applying these techniques has the potential to reduce both pain and anxiety in those instances in which medication alone is ineffective.

NCCAM Intramural Pain Management

With the pending recruitment at the NIH Clinical Center of an Associate Director for Palliative and Pain Care, the NCCAM sees a special opportunity to help focus on pain management in the establishment of its forthcoming Intramural CAM Research Program.

Specialty Research Center on Pain

The NCCAM is making noteworthy contributions to pain research by supporting a CAM Center investigating pain at the University of Maryland. Among the Center's current efforts is the largest trial of acupuncture ever planned. This project will investigate the ability of acupuncture to treat knee pain associated with osteoarthritis.

Other NCCAM Activities

A craniofacial CAM center in Oregon will investigate whether acupuncture, chiropractic therapy, naturopathic medicine, Traditional Chinese medicine, and bodywork therapy are as effective as standard treatment for pain caused by temporomandibular disorders (TMD). A study at Harvard University will determine if chiropractic, acupuncture, or massage therapy reduce pain associated with low back injury. Also, NCCAM maintains an active presence on the NIH Interagency Chronic Pain Task Force established to exchange information, promote collaborative efforts, and enhance pain research.

Research on Special Populations

The NCCAM portfolio includes a number of research projects which investigate traditionally underserved populations among whom health disparities are well documented.

Center for CAM, Minority Aging, and Cardiovascular Disease: CAM Approaches to Health Disparities

Cardiovascular disease, (CVD) accounts for more than 40 percent of all U.S. deaths. It is the leading cause of death in African-Americans. In an effort to thwart the impact of CVD on African-Americans and others, the NCCAM funded a Center for CAM, Minority Aging, and CVD at the Maharishi University of Management in Iowa. In collaboration with traditionally black universities and medical schools, the Center will test the efficacy of Vedic medicine, an ancient Hindi system of healing, for reducing mortality and morbidity associated with CVD in high risk, older African-Americans.

Women's Health

More than 175,000 women will have been diagnosed with breast cancer in 1999;¹³ nearly 30 percent will die of the disease.¹⁴ Studies show that support group participation improves survival rates. A University of Texas study, sponsored by the NCCAM, will introduce strategies of self-transcendence among support group members to improve well-being and immune function and to increase understanding of the relationship between survival rates and support group participation. A current NCCAM-supported study at Stanford University will determine the need for a large clinical evaluation of short-term acupuncture treatment for depression during pregnancy and the post-partum phase. The project will also assess the effect of treatment on infant well-being.

Pediatric CAM Activities

The NCCAM has funded the Pediatric Center for Complementary and Alternative Medicine at the University of Arizona to investigate alternative approaches to pediatric problems for which there are no good conventional medical therapies. Among the Center's studies are: an evaluation of relation/guided imagery and chamomile tea, for the treatment of abdominal pain resulting from bowel disorders; and the use of self-hypnosis, acupuncture, and osteopathic manipulation on muscle tension in children with spastic cerebral palsy.



A current NCCAM-supported study at Stanford University will determine the need for a large clinical evaluation of short-term acupuncture treatment for depression during pregnancy and the post-partum phase.

The project will also assess the effect of treatment on infant well-being.

OUR MECHANISMS of ACTION



Averaging more than 460,000 hits per month during the first half of 1999, the NCCAM website offers important information to healthcare consumers, practitioners, and researchers alike.

http://nccam.nih.gov

Information Dissemination

Information dissemination is a key component of NCCAM's legislative mandate. A considerable portion of NCCAM staff time and resources are dedicated to providing the public with information about the highest quality results of research on complementary and alternative therapies.

NCCAM Information Clearinghouse 1(888) 644-6226

The NCCAM Clearinghouse serves the general public as a major point of contact and access to information about the NCCAM's programs, conferences, and research activities. As the focal point for information resulting from the NCCAM's programmatic and research activities, the Clearinghouse develops and disseminates fact sheets, information packages, and publications to enhance public understanding about CAM research supported by the NIH. During the first 10 months of FY 1999, the Clearinghouse received more than 18,000 requests for information, 53 percent of which were from the general public and 28 percent from patients or those interested in CAM in relationship to a specific health condition. More than 37,000 copies of publications were distributed, and nearly 13,000 referrals were provided to other NIH organizations, NCCAM's research centers, other government agencies, or CAM organizations. Moreover, the Clearinghouse created a quarterly newsletter, Complementary & Alternative Medicine at the NIH, for distribution to some 6,000 public subscribers.

NCCAM Website http://nccam.nih.gov/

The ongoing expansion of the NCCAM's award winning World Wide Web site, first established two years ago, reflects the NCCAM's growth in size and stature. Averaging more than 460,000 hits per month during the first half of 1999, the NCCAM website offers important information to health care consumers, practitioners, and researchers alike. The site includes links to NCCAM program areas, news and events, research grants, funding opportunities, resources, and an electronic copy of the NCCAM newsletter. A major redesign of the website has recently begun in order to make timely information more easily accessible.

Information Dissemination continued

Information Databases

The CAM Citation Index (CCI), consists of approximately 180,000 bibliographic citations dated from 1963 through 1999 assembled by the NCCAM from the National Library of Medicine's MEDLINE data base. Users can perform a search of the bibliographic data or review citations organized by CAM system, disease, or method. Also, in February 1999, NCCAM joined a unique Federal database called the Combined Health Information Database (CHID). CHID carries a variety of health information materials not available in other government databases. Currently, CHID contains 935 records covering the spectrum of CAM modalities.

CCI: http://nccam.nih.gov/nccam/resources/cam-ci/CHID: http://chid.nih.gov/

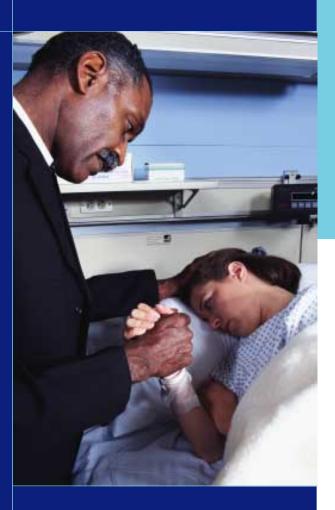
Innovations in Management and Administration

Cancer Advisory Panel for Complementary and Alternative Medicine - CAPCAM

The NCCAM, in collaboration with the National Cancer Institute (NCI), established the federally-chartered CAPCAM to enable discovery of new, promising CAM cancer treatments. Members of the 15-person panel represent a cross section of expertise from the CAM and mainstream oncology communities. CAPCAM's mission is singularly linked to the NCCAM's own: its members review and assess clinical data submitted by CAM scientists, and advise NCCAM on appropriate next research steps. The CAPCAM, which will evaluate 6-9 best case series (retrospective analyses' of data from patients treated with a specific modality in order to assess specific therapeutic benefit) per year, is a critical, new mechanism for outreach to the CAM community. Its members identify cancer treatments currently provided by CAM practitioners, and move into the research stream those practices worthy of scientific study. At its inaugural meeting, the committee recommended additional study of a specific dietary supplement as a treatment for non-small cell lung cancer, currently provided by the Connecticut Institute of Aging and Cancer; and further exploration of homeopathic cancer treatments, provided by the PB Homeopathic Research Foundation, Calcutta. India.

The Cancer Advisory Panel for Complementary and Alternative Medicine reviews and assesses clinical data submitted by CAM scientists and advises NCCAM on appropriate next research steps.

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Frontier medicine can be defined as those CAM practices for which there is no plausible biomedical explanation. Examples include such interventions as magnet therapy, energy healing, homeopathy, and therapeutic prayer.

NCCAM will establish a Frontier Medicine Research Program to test novel hypotheses for which there is minimal preliminary data or lack of a conventional biological rationale.

New Initiatives

Because of NCCAM's relatively recent arrival as an NIH Center, and the dearth of credible scientific evidence on CAM practices, there is unprecedented opportunity for determining the efficacy and safety of CAM modalities. In order to further scientific knowledge in these areas, NCCAM will pursue the following opportunities, and others, in FY 2000 and future years.

Intramural Research Program

A critical component of the NCCAM mission is the development of an NCCAM Intramural CAM Research Program (ICRP) that will provide a critical mass of CAM research to stimulate collaboration with other NIH ICs, our Federal research partners, and other research institutions. The ICRP also will provide an important focus of training opportunities for future CAM researchers. The NCCAM will proceed as expeditiously as possible with recruitment of a recognized authority in clinical research to develop a research program integrated with the other ICs. The program will be multi-dimensional in nature and scope, one which will incorporate alternative medicine practices, train post-doctoral fellows and others in CAM-specific study techniques and methodology, enhance the quality of alternative medical care at the NIH, and add to the cadre of researchers committed to its study.

Frontier Medicine Research Program

Frontier medicine can be defined as those CAM practices for which there is no plausible biomedical explanation. Examples include such interventions as magnet therapy, energy healing, homeopathy, and therapeutic prayer. Despite the fact that these therapies are extensively used by the U.S. public, little high-quality research has investigated their efficacy and safety. NCCAM will initiate such investigations through establishment of a Frontier Medicine Research Program. This Program will involve collaboration between conventional and CAM institutions, practitioners and researchers. Projects supported by this Center will test novel hypotheses for which there is minimal preliminary data or lack of a conventional biological rationale. These hypotheses, if confirmed, could have a substantial impact on our current understanding of biology and medical science.

New Initiatives *continued*

Traditional and Indigenous Systems of Medicine

NCCAM is poised to support developmental studies to establish the methodological feasibility and strengthen the scientific rationale for proceeding to full-scale, randomized, clinical trials on the use of traditional, indigenous systems of medicine (those in which the treatment practices are specific to local cultures) as practiced in the United States. Examples of these systems include Kempo, Native American medicine, Unani, and Traditional Chinese medicine. These studies, should: 1) investigate safety and efficacy; 2) identify and address difficult methodological and design issues particular to complex medical interventions; and 3) allow for the development of contextually and culturally sensitive research, more closely mirroring practice in the U.S. Such trials will facilitate acceptance of proven alternative practices by conventional medical providers.

International Research Program

The international character of CAM necessitates that the NCCAM develop a broad-based international research program that reaches out to CAM practitioners across the world. However, because these practices may be foreign to our conventional medical systems, novel, culturally-sensitive research approaches must be developed within the parameters of locations and populations where discrete CAM systems are practiced. With this context, and in collaboration with several other NIH Institutes and Centers, NCCAM will establish locally-based, traditional, indigenous research projects in countries where the opportunities for promising CAM research are greatest. That process will ensue

in with the forthcoming appointment of a Director for International Affairs, who will develop a long-range plan for the pursuit of studies on a global scale.





NCCAM's proposed Clinical Research Curriculum Award (CRCA) to scientific research institutions would encourage individuals to pursue careers as clinical investigators and provide the skills required for CAM research in particular.



NCAM plans to foster incorporation of CAM information into existing medical, dental, and nursing school curricula, as well as the continuing medical education provided to already licensed conventional physicians.

New Initiatives *continued*

CAM Clinical Research Curriculum Award

Well-trained CAM clinical researchers are needed to address unresolved issues of safety and efficacy as they relate to administering alternative therapies. NCCAM's proposed Clinical Research Curriculum Award (CRCA) to scientific research institutions would encourage individuals to pursue careers as clinical investigators and provide the skills required for CAM research in particular. Creation of the CRCA will stimulate the inclusion of high-quality, multidisciplinary, didactic training as part of the career development of CAM clinical investigators and ensure that trainees become effective CAM clinical scientists.

CAM Education Project Grant

Among NCCAM's primary objectives is facilitating integration of alternative medical treatments and disciplines into conventional health care practice and delivery. Accordingly, the Center plans to make awards to foster incorporation of CAM information into existing medical, dental, and nursing school curricula, as well as the continuing medical education provided to already licensed conventional physicians.

Other Research Opportunities

Among other research opportunies, the NCCAM also is exploring the possibility of pursuing research opportunities such as the use of milk thistle in the treatment of liver disease, the use of herbal therapies to treat upper respiratory infections and otitis media in children, and the effectiveness of therapeutic massage in securing greater weight gain and better developmental progress among premature infants.

National Center *for*Complementary *and*Alternative Medicine

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To acess the CAM Citation Index:

http://nccam.nih.gov/nccam/resources/cam-ci/

To access the Combined Health Information Database: http://chid.nih.gov/

To access the Clinical Trials Web site: http://www.clinicaltrials.gov



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